

WHAT IS CLAIMED IS:

1. A speed reduction gear train, in particular for transmission between a gas turbine and a compressor in a turbomachine, said reduction gear train comprising a sun gear coaxial with the axis of said reduction gear train and connected to said turbine, a planet carrier connected to a first element of said turbomachine coaxially with said sun gear and on which there are mounted a plurality of planet gears meshing with said sun gear, and an annular gear fixed to a second element of said turbomachine and with which said planet gears mesh, one of said first and second elements being a fixed structure of said turbomachine and the other of said elements driving said compressor in rotation, said planet carriers comprising firstly an annular cage having a plurality of pairs of seats for supporting bearings parallel to the axis of said reduction gear train and each having one of said planet gears turning thereon, and a plurality of axial housings, each disposed between two adjacent planet gears, and secondly an annular cage carrier connected to said first element and having a plurality of axial arms, each arm being disposed in one of said housings and being fixed to an adjacent portion of said cage by a pin disposed substantially in the radial midplane of said cage,

wherein the housings of the arms are disposed radially at the intersections between the lines of the forces to which adjacent planet gears are subjected, and wherein each pin for fixing an arm to the adjacent portion of the cage is rigidly secured to one of the parts constituted by said arm and said cage portion, and is mounted to the other one of said parts by a spherical finger type connection which is radially rigid relative to the axis of the reduction gear train and flexible in tilting and in axial displacement, the connection between the pin and the other part being provided by a sleeve surrounding the pin and disposed in an orifice of the

other part, said sleeve comprising two axial end plates and a plurality of coaxial bushings disposed between said end plates, at least one of said bushings being made of an elastomer.

5

2. A reduction gear train according to claim 1, wherein the end annular plates of the sleeve present respective facing radially-inner and radially-outer rabbets, said rabbets themselves being separated by a respective 10 annular rib, and wherein the bushings comprise a rigid inner ring whose ends are received in the radially-inner rabbets of the plates, a rigid outer ring which extends between the radially outer rabbets of the plates, and which presents, at its ends, radially-inner grooves 15 facing the radially-outer rabbets of the plates, and the elastomer bushing is interposed between the inner ring and the outer ring and extends between the ribs of the plates.

20 3. A reduction gear train according to claim 2, wherein the annular chambers are defined by the radially-outer rabbets of the plates and the radially-inner grooves of the outer ring, said chambers containing resilient gaskets.

25

4. A reduction gear train according to claim 3, wherein each of said annular chambers further contains an anti-extrusion ring for preventing the elastomer from being extruded, each of said anti-extrusion rings being 30 interposed between a resilient gasket and the front face of the radially-inner groove of the outer ring.

35 5. A reduction gear train according to claim 1, wherein one of the plates of the sleeve presses against the part to which the pin is fixed, and the other plate is pressed against the inner ring by a nut co-operating with a thread on the pin.

6. A reduction gear train according to claim 1, wherein the pin is rigidly connected to the arm and is disposed perpendicularly to the axis of the reduction gear train.

5

7. A reduction gear train according to claim 1, wherein the pin is formed at the end of the arm and is parallel to the axis of the reduction gear train.

10 8. A reduction gear train according to claim 1, wherein the annular gear is fixed to the fixed structure of the turbomachine, and the cage carrier drives the compressor in rotation.